AMENDMENTS TO THE CLAIMS

Kindly amend claims 3-10, and 14, cancel claims 1 and 2, and add new claims 17-20. The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

Claims 1-2 (cancelled)

Claim 3 (currently amended): A method as set forth in claim [1] 20, wherein the restriction function $\gamma_{SF}(m,l)$ is produced in dependence in respect of time on the noise estimate which is variable in respect of time of the dynamic noise component ~~of the noisy audio signal~~.

Claim 4 (currently amended): A method as set forth in claim 3 wherein the restriction function $\gamma_{SF}(m,l)$ is produced in dependence in respect of time on the instantaneous noise power which is variable in respect of time of the ~~estimated~~ noise estimate ~~component of the noisy audio signal~~.

Claim 5 (currently amended): A method as set forth in claim [1] 20, wherein the restricted filter function is produced in one method step.

Claim 6 (currently amended): A method as set forth in claim [1] 17, wherein filtering of the noisy audio signal is executed in the time domain, in the frequency domain or in another mathematically describable signal space.

Claim 7 (currently amended): A method as set forth in claim [1] 20, wherein the unrestricted filter function $H_G^{dyn}(m,l)$ is determined in accordance with an approach according to Wiener, in which the mean quadratic error between useful signal and estimate is used as the approximation criterion.

Claim 8 (currently amended): A method as set forth claim [1] 20, wherein the unrestricted filter function $H_G^{dyn}(m,l)$ is determined in accordance with the amplitude subtraction method.

Claim 9 (currently amended): A method as set forth claim [1] 20, wherein the noisy audio signal $x(k)$ is transformed into the frequency domain, then the noise component $N(m,l)$ of the transformed noisy audio signal $X(m,l)$ is estimated, the unrestricted filter function $H_G^{dyn}(m,l)$ and the restriction function $\gamma_{SF}(m,l)$ is produced and the restricted filter function H_b is formed therefrom, then the transformed noisy audio signal $X(m,l)$ is multiplied by the restricted filter function H_b and then transformed back into the time domain.

Claim 10 (currently amended): A method as set forth in claim [1] 20, wherein the filter function $H_G^{dyn}(m,l)$ is determined by means of a known approach utilizing an estimate $\hat{\Phi}_{NN}(m,l)$ of the instantaneous auto-noise power density.

Claim 11 (previously presented): A method as set forth in claim 10 wherein the estimate $\hat{\Phi}_{NN}(m,l)$ of the instantaneous auto-noise power density is determined from a weighting of the estimate $\hat{\Phi}_{NN}(m)$ with a time-dependent weighting factor $\alpha(m,l)$ to give:

$$\hat{\Phi}_{NN}(m,l) = \alpha(m,l) \cdot \hat{\Phi}_{NN}(m).$$

Claim 12 (previously presented): A method as set forth in claim 11 wherein the weighting factor $\alpha(m,l)$ is ascertained in accordance with:

$$\alpha(m,l) = \frac{\min\left(|X(m,l)|^2\right)}{\min\left(\hat{\Phi}_{NN}(m)\right)}$$

wherein $X(m,l)$ is a representation of the noisy audio signal.

Claim 13 (previously presented): A method as set forth in claim 12 wherein the dynamic restriction function $\gamma_{SF}(m,l)$ is determined as:

$$\gamma_{SF}(m,l) \sim (\alpha(m,l))^{\beta}, \text{ with } -5 < \beta < 5.$$

Claim 14 (currently amended): A method as set forth in claim 13 wherein

$$[\beta = 1/2.]$$

$$\underline{\beta = -1/2.}$$

Claim 15 (previously presented): Apparatus for reducing random, continuous, non-stationary noise in audio signals which are present in discrete form or which are obtained from the sampling of an analog audio signal with random, continuous, non-stationary noise, wherein the noisy audio signal is filtered by means of a filter function whereby a device (4; 22) for estimating the noise component of the noisy audio signal, wherein said estimate takes account of the change in respect of time of the statistical properties of the noise,

a device (8; 30) for producing an unrestricted filter function H_G^{dyn} in per se known manner having regard to the previously ascertained estimate of the noise component which takes account of the changes in respect of time of the statistical properties of the noise,

a device (24, 40) for producing a time-dependent restriction function γ_{SF} in dependence on the estimated noise component of the noisy audio signal, and

a device (7; 40) which produces a restricted filter function H_b from the unrestricted filter function H_G^{dyn} and the time-dependent restriction function γ_{SF}, and

a filter (7; 50) which filters the noisy audio signal with the restricted filter function H_b.

Claim 16 (previously presented): Apparatus as set forth in claim 15 wherein the device (9; 40) produces the restricted filter function H_b in accordance with:

$$H_b = H_G^{dyn}(m,l,\gamma_{SF}(m,l)) = \begin{cases} H_G^{dyn}(m,l) & \text{for} \quad H_G^{dyn}(m,l) > \gamma_{SF}(m,l) \\ \gamma_{SF}(m,l) & \text{other.} \end{cases}$$

Claim 17 (new): A method of reducing random, continuous, non-stationary noise in a noisy audio signal, comprising:

establishing a dynamic noise component from the noisy audio signal;

establishing a dynamic signal component from the noisy audio signal;

dynamically determining a filter function in response to the dynamic signal component;

dynamically limiting the filter function in response to the dynamic noise component; and

applying the filter function to the noisy audio signal.

Claim 18 (new): The method of claim 17, further comprising:

sampling an analog audio signal having random, continuous, non-stationary noise; and

obtaining the noisy audio signal from the sampled analog audio signal.

Claim 19 (new): The method of claim 17, wherein the noisy audio signal is present in discrete form.

Claim 20 (new): The method of claim 17, further comprising:

producing a noise estimate, which describes the time-dependent change of the dynamic noise component,

determining an unrestricted filter function $H_G(m,l)$ from the noise estimate;

producing a restriction function $\gamma_{SF}(m,l)$ from the noise estimate;

establishing a restricted filter function $H_G^{dyn}(m,l)$;

setting the restricted filter function $H_G^{dyn}(m,l)$ equal to the greater of the unrestricted filter function $H_G(m,l)$ or the restriction function $\gamma_{SF}(m,l)$; and

filtering the noisy audio signal with the restricted filter function $H_G^{dyn}(m,l)$;

wherein m is a discrete spectral frequency or equivalent thereof, and l is a discrete time of a signal block in the case of block-wise signal processing,.

Claim 21 (new): The method of claim 20, wherein a block may also include only one sample value.